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| 10/777,909 | 02/12/2004 | William Preston Alexander III | AUS920030825US1 | 6082 |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptonotifs@yeeiplaw.com

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|------------------------------|---------------------------------------|-----------------------------------------|--|
| Office Action Summary | Application No. 10/777,909 | Applicant(s) ALEXANDER ET AL. | |
| | Examiner SATISH S. RAMPURIA | Art Unit 2191 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/21/2008, 06/25/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. This action is in response to the amendment filed on 03/12/2008.
2. The objection to specification is withdrawn in view of Applicant's amendment.
3. The rejection under 35 U.S.C. §101 to claims 9-24 is withdrawn in view of Applicant's amendment.
4. Claims cancelled by the Applicants: 2, 3, and 9-24.
5. Claims 1, 4-8 are pending.

Response to Arguments

6. Applicant's arguments filed 03/12/2008 have been fully considered but they are not persuasive.

(A) With respect to comments made by applicants for establishing a prima facie case of obviousness based up on prior art that Alexander and Kazi are nonanalogous art (remarks page 6), it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Both Alexander and Kazi are analogous art. Alexander discloses the reduction of trace files which are taken in real time to improve the performance of the system (see Abstract and Summary). The reduction takes by inputting the trace files, the trace information are obtained either statically or dynamically and represented as a tree of events. Kazi in a similar manner discloses the

generation of trace execution threads of Java Virtual Machine. The Implantation is done by producing dynamic execution tree of traces (See, pages 99).

(B) With respect applicants argument that Examiner failed to state a prima facie obviousness rejection against claim 1 because neither Alexander nor Kazi teach or suggest “generating a minimized call tree data structure from the plurality of call tree data structures wherein the minimized call tree data structure includes a minimum set of nodes that are consistent between the plurality of call tree data structures; and outputting the minimized call tree data structure”. Examiner disagree. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Alexander discloses dynamically tracing and reduction, in which case information is obtained in real-time, as each event occurs, and is automatically reduced and added to the trace representation. Alternately, the tracing and reduction may be static, in which case a trace text file or binary file is obtained from a trace buffer, and the reduction takes place using the trace file as input, see col. 2, lines, 15-27. Alexander does not explicitly discloses the generating a minimized call tree data structure from the plurality of call tree data structures wherein the minimized call tree

data structure includes a minimum set of nodes that are consistent between the plurality of call tree data structures; and outputting the minimized call tree data structure as recognized by the examiner, however, as recognized by Applicants that Kazi discloses merging the trace data and dynamically producing trace execution call (remarks page 7). Kazi teaches "To facilitate the performance analysis of the call graph, statistical information about each of the methods in the program is gathered in the merge step. Each detailed .prf trace file is analyzed to gather the total number of calls made to each method, the maximum, minimum, and average execution times, and the standard deviation of the execution time for each method." (See Kazi, page 100, "Run-time statistics generation"). Therefore, in regard to the merge step cited, it is clear that Kazi's discloses averaging specific information of a call, graph by totaling the data and computing the average. Averaging the various runs (various values of a respective node) of a computer program inherently minimizes variations (each value relating to a run) in the profile data (trace data).

(C) With respect to applicant's argument for claim 4 that Alexander does not teach or suggest generating a minimized call tree data structure. However, claim 4 is dependent on claim 1, and in the rejection of claim 1 is incorporated into claim 4, examiner described that the generating a minimized call tree is taught by kazi as explained above and below in the rejection. Therefore, the rejection is proper and maintained herein.

Information Disclosure Statement

7. An initialed and dated copy of Applicant's IDS form 1449 filed on 01/21/2008 and 06/25/2008 is attached to the instant Office action.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 4-8 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,338,159 to Alexander III et al. (hereinafter, Alexander(1)) in view of document (Title: JaViz: A client/server Java profiling tool)published on 2000 by Kazi et al. (hereinafter, Kazi).

Alexander(1) discloses:

1. A method, in a data processing system, for generating a minimized call tree data structure from trace data obtained from a plurality of executions of a computer program, comprising:

obtaining a plurality of call tree data structures (col. 2, lines 32-33 "a call stack...one or more nodes in the tree") corresponding to the trace data (col. 2, lines 28-29 "trace

information...obtained...") for the plurality of executions of the computer program (col. 2, lines, 38-39 "...number of Java bytecodes executed in each method... called").

Alexander(1) does not disclose generating a minimized call tree data structure from the plurality of call tree data structures wherein the minimized call tree data structure includes a minimum set of nodes that are consistent between the plurality of call tree data structures; and outputting the minimized call tree data structure.

However Kazi discloses in an analogous computer system generating a minimized call tree data structure from the plurality of call tree data structures (Kazi page 100 "Tree generation... merged trace files to create an output file containing the dynamic execution tree") wherein the minimized call tree data structure includes a minimum set of nodes that are consistent between the plurality of call tree data structures (Kazi page 100 "Tree generation... Run-time statistics generation... Each detailed... trace file is analyzed to gather the total number of calls made to each method, the maximum, minimum, and average execution times, and the standard deviation of the execution time for each method"). Thereby minimizing the display for execution.; and outputting the minimized call tree data structure (Kazi page 100 "Tree generation... merged trace files to create an output file containing the dynamic execution tree").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of generating a minimized call tree data structure from the plurality of call tree data structures wherein the

minimized call tree data structure includes a minimum set of nodes that are consistent between the plurality of call tree data structures; and outputting the minimized call tree data structure as taught by Kazi into the method for providing the trace information as taught by Alexander(1). The modification would be obvious because of one of ordinary skill in the art would be motivated to generate a minimize call tree data structure from the trace data to provide a performance analysis tool to allow developer to determine the execution times have high of low variance as suggested by Kazi (page 115, "Conclusion").

Per claim 4:

The rejection of claim 1 is incorporated and further, Alexander discloses:

4. The method of claim 1, wherein generating the minimized call tree data structure includes: copying a first call tree data structure; and walking a second call tree data structure over the first call tree data structure to generate the minimized call tree data structure (col. 6, lines 27-29 "the tree is traversed (i.e., walking) to the parent (using the parent pointer), and the current tree node is set equal to the parent node (step 178)... the tree can be dynamically pruned in order to reduce the amount of memory dedicated to its maintenance (step 179).").

Per claim 5:

The rejection of claim 4 is incorporated and further, Alexander discloses:

5. The method of claim 4, wherein walking the second call tree data structure over the first call tree data structure includes: for each node that exists in both the first call tree data structure and the second call tree data structure, generating a node in the minimized call tree data structure (col. 6, lines 33-35 “a check is made to determine if the module is already a child node of the current tree node (step 180). If not, a new node is created for the module and it is attached to the tree below the current tree node (step 182).”) and associating values with the node (col. 7, lines 51-55 “Calls 190 lists.. number of times each routine has been called. Base 192 is the total time spent in the routine. Cum 194 is the cumulative time spent in the routine and all routines called by the routine. Cum2196 is the cumulative time plus time spent in recursive routines” and FIG. 9A where the base cum and sum values are disclosed).

Per claim 6:

The rejection of claim 5 is incorporated and further, Alexander discloses:

6. The method of claim 5, wherein the values associated with the node are values that correspond to the minimum of the values associated with corresponding nodes in the first call tree data structure and the second call tree data structure (col. 7, lines 51-55 “Calls 190 lists.. number of times each routine has been called. Base 192 is the total time spent in the routine. Cum 194 is the cumulative time spent in the routine and all routines called by the routine. Cum2196 is the cumulative time plus time spent in recursive routines” and FIG. 9A where the base cum and sum values are disclosed).

Per claim 7:

The rejection of claim 4 is incorporated and further, Alexander discloses:

7. The method of claim 4, wherein walking the second call tree data structure over the first call tree data structure includes: for each node that exists in only one of the first call tree data structure and the second call tree data structure, inhibiting creating a node in the minimum call tree data structures (col. 6, lines 33-35 “a check is made to determine if the module is already a child node of the current tree node (step 180). If not, a new node is created for the module and it is attached to the tree below the current tree node (step 182).”).

Per claim 8:

The rejection of claim 6 is incorporated and further, Alexander discloses:

8. The method of claim 6, wherein the values associated with each node in the minimized call tree data structure include a minimum base value, a minimum number of calls, a minimum cumulative value, and a minimum absolute cumulative value (col. 4, lines 43-48 “statistics shown include the number of distinct times the call stack is produced, the sum of the time spent in the call stack, the total time spent in the call stack plus the time in those call stacks invoked from this call stack (referred to as cumulative time), and the number of instances of this routine above this instance (indicating depth of recursion)”).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is **(571) 272-3732**. The examiner can normally be reached on **8:30 am to 5:00 pm** Monday to Friday except federal holidays. Any inquiry of a general nature or relating to the status of this application should be directed to the **TC 2100 Group receptionist: 571-272-2100**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wei Y. Zhen** can be reached on **(571) 272-3708**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Art Unit: 2191

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Satish S. Rampuria

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